

SET OF CLAIMS

1. Vehicle comprising

a chassis,

a pair of front wheels and

a suspension assembly for connecting said front wheels to said chassis, said suspension assembly being adapted to allow said front wheels to move transverse to their axis of rotation, but in opposite directions, in order to tilt said chassis,

characterized in that

said suspension assembly comprises a wheel orientation defining rod being, on the one hand, coupled to a front wheel and, on the other hand, pivotably coupled to said chassis, wherein a coupling of said wheel orientation defining rod to said chassis is positioned to ensure that a wheel orientation defined by said wheel orientation defining rod is essentially independent of said wheel movement transverse to the wheel's axis of rotation.

2. Vehicle according to claim 1, characterized in that said wheel orientation defining rod is a steering rod.

3. Vehicle according to claim 1 or 2, characterized in that said suspension assembly comprises a first pendulum arm for coupling a front wheel to said chassis.

4. Vehicle according to claim 3, characterized in that said coupling of said wheel orientation defining rod to said chassis is positioned approximately on a tilting pivot through a joint for coupling said first pendulum arm to said chassis.

5. Vehicle according to claim 3, characterized in that said suspension assembly comprises a second pendulum arm and said coupling of said wheel orientation defining rod

to said chassis is positioned approximately on an axis defined through employing the poles in the suspension mechanism rectangle or trapezoid.

5 6. Vehicle according to any of claims 3 to 5, characterized by a cardan joint for coupling said pendulum arm to said chassis and/or to said front wheel.

7. Vehicle according to any preceding claim, characterized in that said suspension assembly is adjustable with view to a force acting against said movement of said front wheels and thereby against said tilting of said chassis.

10 8. Vehicle according to claim 7, characterized by means for automatically adjusting said suspension assembly, in response to the circumstances.

15 9. Vehicle according to claim 7 or 8, characterized by means for manually adjusting said suspension assembly.

20 10. Vehicle according to any preceding claim, characterized in that said suspension assembly comprises a pivotable balance beam being coupled to one of said front wheels on either side.

11. Vehicle according to any preceding claim, characterized in that said suspension assembly comprises an adjusting element being pressed against a moving element with adjustable pressing force.

25 12. Vehicle according to claim 11, characterized by a motor for adjusting said pressing force.

13. Vehicle according to any preceding claim, comprising

30 a pair of rear wheels and

a suspension assembly for connecting said rear wheels to said chassis, said suspension assembly being adapted to allow said rear wheels to move transverse to their axis of rotation, but in opposite directions, in order to tilt said chassis,

5 characterized in that

said suspension assembly comprises a wheel orientation defining rod being, on the one hand, coupled to a rear wheel and, on the other hand, pivotably coupled to said chassis, wherein a coupling of said wheel orientation defining rod to said chassis is
10 positioned to ensure that a wheel orientation defined by said wheel orientation defining rod is essentially independent of said wheel movement transverse to the wheel's axis of rotation.

14. Vehicle according to claim 13, characterized in that said wheel orientation defining
15 rod is a steering rod.

15. Vehicle according to claim 13 or 14, characterized in that said suspension assembly comprises a first pendulum arm for coupling a rear wheel to said chassis.

20 16. Vehicle according to claim 15, characterized in that said coupling of said wheel orientation defining rod to said chassis is positioned approximately on a tilting pivot through a joint for coupling said first pendulum arm to said chassis.

25 17. Vehicle according to claim 15, characterized in that said suspension assembly comprises a second pendulum arm and said coupling of said wheel orientation defining rod to said chassis is positioned approximately on an axis defined through employing the poles in the suspension mechanism rectangle or trapezoid.

30 18. Vehicle according to any of claims 15 to 17, characterized by a cardan joint for coupling said pendulum arm to said chassis and/or to said rear wheel.

19. Vehicle according to any of claims 13 to 18, characterized in that said suspension assembly is adjustable with view to a force acting against said movement of said rear wheels and thereby against said tilting of said chassis.

5 20. Vehicle according to claim 19, characterized by means for automatically adjusting said suspension assembly, in response to the circumstances.

21. Vehicle according to claim 19 or 20, characterized by means for manually adjusting said suspension assembly.

10 22. Vehicle according to any of claims 13 to 21, characterized in that said suspension assembly comprises a pivotable balance beam being coupled to one of said rear wheels on either side.

15 23. Vehicle according to any of claims 13 to 22, characterized in that said suspension assembly comprises an adjusting element being pressed against a moving element with adjustable pressing force.

20 24. Vehicle according to claim 23, characterized by a motor for adjusting said pressing force.

25 25. Vehicle, particularly according to any preceding claim, characterized by 2 front wheels with variable track widths.

26 26. Vehicle according to claim 25, characterized in that said front wheels are coupled to a chassis by means of pendulum arms mounted to said chassis pivotable about axes traverse to the front wheels' axes of rotation.

30 27. Vehicle according to claim 26, characterized by cardan joints for coupling said pendulum arms to said chassis.

28. Vehicle according to claim 26 or 27, characterized in that a pivoting axis of a pendulum arm is vertical, when the vehicle is standing on horizontal ground.

29. Vehicle according to claim 26 or 27, characterized in that a pivoting axis of a pendulum arm is inclined with respect to a vertical direction, when the vehicle is standing on horizontal ground.

5 30. Vehicle according to any of claims 26 to 29, characterized in that the pivoting axes of said pendulum arms are - in the forward direction of the vehicle - within the area defined by the outer and inner planes defined by the outer and inner sides of the wheel transverse to the wheel's rotation axis, in the case of the smallest track widths.

10 31. Vehicle, particularly according to any preceding claim, characterized by 2 rear wheels with variable track widths.

15 32. Vehicle according to claim 31, characterized in that said rear wheels are coupled to a chassis by means of pendulum arms mounted to that chassis pivotable about axes traverse to the rear wheels' axes of rotation.

33. Vehicle according to claim 32, characterized by cardan joints for coupling said pendulum arms to said chassis.

20 34. Vehicle according to claim 32 or 33, characterized in that a pivoting axis of said pendulum arms is vertical, when the vehicle is standing on horizontal ground.

25 35. Vehicle according to claim 32 or 33, characterized in that a pivoting axis of said pendulum arms is inclined with respect to a vertical direction, when the vehicle is standing on horizontal ground.

30 36. Vehicle according to any of claims 32 to 35, characterized in that the pivoting axes of said pendulum arms are - in the forward direction of the vehicle - within the area defined by the outer and inner planes defined by the outer and inner sides of the wheel transverse to the wheel's rotation axis, in the case of the smallest track widths.